

PATENT COOPERATION TREATY

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From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
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PCT

WRITTEN OPINION

(PCT Rule 66)

Date of Mailing
(day/month/year)

14 MAY 2004

Applicant's or agent's file reference

01019/03PCT

REPLY DUE

within 2 months/days from
the above date of mailing

International application No.

PCT/US03/17840

International filing date (day/month/year)

06 June 2003 (06.06.2003)

Priority date (day/month/year)

06 June 2002 (06.06.2002)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): E21B 43/11, 17/10, 43/08, 43/16 and US Cl.: 166/308.1, 305.1, 100

Applicant

SAND CONTROL, INC.

1. This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2 (a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☒ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

DOCKETED
BY du DATE 6/15/04
FOR ACTION ON FOLLOWING DATES:
7/14/04

3. The applicant is hereby invited to reply to this opinion.

When? See the time limit indicated above. ~~The applicant may, before the expiration of that time limit, request this Authority to grant an extension. See rule 66.2(d).~~

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 06 October 2004 (06.10.2004)

Name and mailing address of the IPEA/US

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Authorized officer

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Telephone No. 703-308-1113

WRITTEN OPINION

International application No.

PCT/US03/17840

I. Basis of the opinion

1. With regard to the elements of the international application: *

- ☒ the international application as originally filed
- ☒ the description:
 pages 1-10 _____, as originally filed
 pages NONE _____, filed with the demand
 pages NONE _____, filed with the letter of _____
- ☒ the claims:
 pages 11-13 _____, as originally filed
 pages NONE _____, as amended (together with any statement) under Article 19
 pages NONE _____, filed with the demand
 pages NONE _____, filed with the letter of _____
- ☒ the drawings:
 pages 1-7 _____, as originally filed
 pages NONE _____, filed with the demand
 pages NONE _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages NONE _____, as originally filed
 pages NONE _____, filed with the demand
 pages NONE _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE _____
- ☐ the claims, Nos. NONE _____
- ☐ the drawings, sheets/fig NONE _____

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."

WRITTEN OPINION

International application No.
PCT/US03/17840

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims <u>2, 8-14</u>	YES
	Claims <u>1, 3-7, 15-19</u>	NO
Inventive Step (IS)	Claims <u>8-14</u>	YES
	Claims <u>1-7 and 15-19</u>	NO
Industrial Applicability (IA)	Claims <u>1-19</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Claims 1, 3-7 and 15-19 lack novelty under PCT Article 33(2) as being anticipated by Johnson.

Regarding claims 1 and 15, Johnson discloses a method and system of injection well construction and completion comprising drilling a borehole through an injection zone of a formation (see Fig. 1); running a casing (20, 200) into the borehole, wherein the casing includes an extendable assembly (26, 212, 214, 216) comprising a fixed portion and a movable portion having a filter media (135) at its distal end so that the assembly is positioned adjacent a site in the injection zone to form a conduit once extended (see Fig. 4); providing well completion tubing and equipment (see Fig. 1); and injecting fluids into the well through the conduit (see col. 13, line 45 through col. 14, line 55).

Regarding claim 3, an injection pressure exceeds a fracture pressure of the injection zone (see col. 13, line 66 through col. 14, line 8).

Regarding claims 4-7 and 16-19, a plurality of assemblies (26, 212, 214, 216) are included so that each extendable assembly is positioned adjacent a site in the injection zone (see Figs. 5 and 6).

Claim 2 lacks an inventive step under PCT Article 33(3) as being obvious over Johnson in view of Moran et al. Johnson teaches the method of injection well construction and completion that comprises extendable assemblies as applied to claim 1 above. It is not taught that the casing is cemented in place after the assemblies are extended but before the injecting step.

Moran et al teach a casing string with extendable assemblies similar to that of Johnson. Moran et al further teach that the casing is cemented in place after the assemblies are extended but before any other well completion step is performed (see col. 3, lines 38-65). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to make such a combination because the casing would be centralized within the borehole prior to cementing took place, or any other completion step was preformed, as taught by Moran et al.

Claims 8-14 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest displacing the conventional drilling fluid with a "Drill-In Fluid", or that the casing is cemented into place after the assemblies are extended but before the injecting step.

Claims 1-19 meet the criteria set out in PCT Article 33(4), and thus meet industrial applicability because the subject matter claimed can be made or used in industry.

WRITTEN OPINION

International application No.

PCT/US03/17840

VI. Certain document cited

1. Certain published documents (Rule 70.10)

Application No <u>Patent No.</u>	Publication Date <u>(day/month/year)</u>	Filing Date <u>(day/month/year)</u>	Priority Date (valid claim) <u>(day/month/year)</u>
US 6,631,764 B2	14 October 2003 (14.10.2003)	06 February 2001 (06.02.2001)	None

2. Non-written disclosures (Rule 70.9)

<u>Kind of non-written disclosure</u>	Date of non-written disclosure <u>(day/month/year)</u>	Date of written disclosure referring to non-written disclosure <u>(day/month/year)</u>
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WRITTEN OPINION

International application No.

PCT/US03/17840

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Claims 4, 11, and 16 are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or contents thereof: the recitation of "is positions adjacent a site" in each claim should most likely be --is positioned adjacent a site--.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

TIME LIMIT:

The time limit set for response to a Written Opinion may not be extended. 37 CFR 1.484(d). Any response received after the expiration of the time limit set in the Written Opinion will not be considered in preparing the International Preliminary Examination Report.

V. 2. Citations and Explanations:

Claims 1, 3-7 and 15-19 lack novelty under PCT Article 33(2) as being anticipated by Johnson.

Regarding claims 1 and 15, Johnson discloses a method and system of injection well construction and completion comprising drilling a borehole through an injection zone of a formation (see Fig. 1); running a casing (20, 200) into the borehole, wherein the casing includes an extendable assembly (26, 212, 214, 216) comprising a fixed portion and a movable portion having a filter media (135) at its distal end so that the assembly is positioned adjacent a site in the injection zone to form a conduit once extended (see Fig. 4); providing well completion tubing and equipment (see Fig. 1); and injecting fluids into the well through the conduit (see col. 13, line 45 through col. 14, line 55).

Regarding claim 3, an injection pressure exceeds a fracture pressure of the injection zone (see col. 13, line 66 through col. 14, line 8). Regarding claims 4-7 and 16-19, a plurality of assemblies (26, 212, 214, 216) are included so that each extendable assembly is positioned adjacent a site in the injection zone (see Figs. 5 and 6).

Claim 2 lacks an inventive step under PCT Article 33(3) as being obvious over Johnson in view of Moran et al. Johnson teaches the method of injection well construction and completion that comprises extendable assemblies as applied to claim 1 above. It is not taught that the casing is cemented in place after the assemblies are extended but before the injecting step.

Moran et al teach a casing string with extendable assemblies similar to that of Johnson. Moran et al further teach that the casing is cemented in place after the assemblies are extended but before any other well completion step is performed (see col. 3, lines 38-65). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to make such a combination because the casing would be centralized within the borehole prior to cementing took place, or any other completion step was preformed, as taught by Moran et al.

Claims 8 and 10-14 lack an inventive step under PCT Article 33(3) as being obvious over Johnson in view of Parlar et al. Johnson teaches a method of injection well construction and completion comprising drilling a borehole through an injection zone of a formation (see Fig. 1); running a casing (20, 200) into the borehole, wherein the casing includes an extendable assembly (26, 212, 214, 216) comprising a fixed portion and a movable portion having a filter media (135) at its distal end so that the assembly is positioned adjacent a site in the injection zone to form a conduit once extended (see Fig. 4); and injecting fluids into the well through the conduit (see col. 13, line 45 through col. 14, line 55). It is not taught that the conventional drilling fluid used to drill the borehole is displaced with a "Drill-In Fluid".

Parlar et al teach a method of well construction and completion similar to that of Johnson. Parlar et al further teach the step of displacing a conventional drilling fluid with a drill-in fluid (see col. 3, line 65 through col. 4, line 7). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to make such a combination because the method would provide reduced cost and improved fluid management practices, as taught by Parlar et al in column 4, lines 15-20.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Regarding claim 10, the combination applied to claim 8 above teaches an injection pressure exceeds a fracture pressure of the injection zone (see col. 13, line 66 through col. 14, line 8 of Johnson).

Regarding claims 11-14, the combination applied to claim 8 above teaches a plurality of assemblies (26, 212, 214, 216) are included so that each extendable assembly is positioned adjacent a site in the injection zone (see Figs. 5 and 6 of Johnson).

Claim 9 lacks an inventive step under PCT Article 33(3) as being obvious over the prior art as applied in the immediately preceding paragraph and further in view of Moran et al. The combination applied to claim 8 above teaches a method of injection well construction and completion that comprises extendable assemblies. It is not taught that the casing is cemented in place after the assemblies are extended but before the injecting step.

Moran et al teach a casing string with extendable assemblies similar to that of the combination. Moran et al further teach that the casing is cemented in place after the assemblies are extended but before any other well completion step is performed (see col. 3, lines 38-65). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to make such a combination because the casing would be centralized within the borehole prior to cementing took place, or any other completion step was preformed, as taught by Moran et al.

Claims 1-19 meet the criteria set out in PCT Article 33(4), and thus meet industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----

US 5,829,520 A (JOHNSON) 03 November 1998, see column 12, line 59 through column 15, line 55, and figures 4-6.